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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LUGO, DAVID B	

ART UNIT	PAPER NUMBER
2634	12

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/476,770	SHENOI, KISHAN	
	Examiner	Art Unit	
	David B. Lugo	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-7,9-15,17-21,23-27,29,30,32-35 and 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12* is/are allowed.

6)☒ Claim(s) *1,2,5-7,9-11,13-15,17-21,23-27,29,30,32-35 and 37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 2/23/04 is being considered by the examiner, an initialed copy being enclosed herewith.

Drawings

2. The proposed drawing corrections received on 2/23/04 are approved. Formal drawings are required in response to this Office action.

Response to Arguments

3. Applicant's arguments filed 2/23/04 with respect to the rejection of claims 1, 2, 14, 15, 17-21, 23-27, 29, 30, 32, 33, 35 and 37-39 under 35 U.S.C. 102(e), and the rejections of claims 5 and 34, 6 and 7, 9, and 10, 11 and 13 under 35 U.S.C. 103(a) in view of Erreygers, Conroy et al., Tzannes et al., Adler, and Pesetski et al. have been fully considered but they are not persuasive.

4. Applicant argues that Erreygers does not perform amplification as is performed in the present invention, and thus teaches away from the presently claimed invention. However, the claims simply recite that an upstream amplifier is used for amplifying upstream signals, and a downstream amplifier is used for amplifying downstream signals. Erreygers discloses an ADSL transceiver 62 for amplifying ADSL signals in one direction (lines 49-53), and an ADSL transceiver 64 for amplifying ADSL signals in the other direction (lines 49-53). Thus, the ADSL transceivers are considered amplifiers since they perform an amplification function. There is no distinction between the amplification performed by Erreygers and the amplification as recited in the claims, and Erreygers is thus considered to meet the claimed limitations of amplifying upstream and downstream signals by upstream and downstream amplifiers.

5. Applicant further argues that the filtering performed by high pass filters 56 and 58 are different from the pass filters of the present invention which are used to separate the upstream direction from the downstream direction, and the downstream direction from the upstream direction. However, the claims do not specifically recite that the pass filters separate the downstream signals from the upstream signals. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The high pass filters 56 and 58 inherently perform an isolating function, and are thus considered to meet the claimed limitations of an upstream pass filter for isolating an upstream signal, and a downstream pass filter for isolating a downstream signal.

6. Applicant's arguments, see page 13, second paragraph, filed 2/23/04, with respect to the rejection of claims 1, 2, 14, 15, 17, 18, 21, 23, 24, 26, 27, 30, 37 and 38 under 35 U.S.C. 102(e) as being anticipated by McGinn et al. have been fully considered and are persuasive. The rejection of those claims in view of McGinn et al. has been withdrawn.

Claim Objections

7. Claims 17, 29, 30, 32 and 33 are objected to because of the following informalities:

a. Claim 17, line 3, "output" should be --input--, as claim 18 recites a high pass filter coupled to an output of the downstream amplifier (see claim 29, similar to claim 17).

b. Claim 29 depends from claim 28, which is cancelled. For examination purposes, claim 29 is considered to depend from independent claim 26, as claim 17, which is similar to claim 29, depends from independent claim 14, which is similar to claim 26.

c. Claim 32 depends from claim 31, which is cancelled. For examination purposes, claim 32 is considered to depend from independent claim 26, as claim 19, which is similar to claim 32, depends from independent claim 14, which is similar to claim 26. Appropriate correction is required.

8. Applicant is advised that should claim 26 be found allowable, claim 21 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 2, 14, 15, 17-21, 23-27, 29, 30, 32, 33, 35 and 37-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Erreygers U.S. Patent 6,236,664.

11. Regarding claim 1, Erreygers discloses a DSL repeater unit 50 in Fig. 2, where an upstream signal from a customer premise 20 is isolated by passing through an upstream pass filter 58, the output of pass filter 58 is supplied to ADSL transceiver 64 (Fig. 3), considered an upstream amplifier, for amplifying the isolated upstream signal (col. 5, lines 53-56), a downstream signal from central office 10 is isolated by passing through a downstream pass filter

56, and the output of pass filter 56 is supplied to ADSL transceiver 62 (Fig. 3), considered a downstream amplifier, for amplifying the isolated downstream signal (col. 5, lines 49-53).

12. Regarding claim 2, the gain is increased with ADSL repeater 60.

13. Regarding claim 14, Erreygers discloses a DSL repeater unit 50 in Fig. 2, where an upstream signal from a customer premise 20 is isolated by passing through an upstream signal isolating pass filter 58, the output of pass filter 58 is supplied to ADSL transceiver 64 (Fig. 3), considered an upstream signal amplifier, for amplifying the isolated upstream signal (col. 5, lines 53-56), a downstream signal from central office 10 is isolated by passing through a downstream signal isolating pass filter 56, and the output of pass filter 56 is supplied to ADSL transceiver 62 (Fig. 3), considered a downstream amplifier, for amplifying the isolated downstream signal (col. 5, lines 49-53).

14. Regarding claim 15, the DSL repeater unit 50 includes ADSL repeater 60.

15. Regarding claims 17 and 18, high pass filters 56 and 58 are respectively coupled to the input and output of the downstream amplifier.

16. Regarding claims 19 and 20, high pass filters 56 and 58, considered band pass filters, are respectively coupled to the input and output of the upstream amplifier.

17. Regarding claim 21, Erreygers teaches a digital subscriber loop with DSL repeater 50.

18. Regarding claim 23, the DSL repeater is considered to be part of a kit.

19. Regarding claim 24, the ADSL repeater 60 comprising the amplifier is supplied power via power supply 66.

20. Regarding claim 25, ADSL transceiver 62 comprising the amplifier comprises a control information connection coupled thereto from controller 68.

21. Regarding claim 26, Erreygers teaches a digital subscriber loop with DSL repeater unit 50 in Fig. 2, where an upstream signal from a customer premise 20 is isolated by passing through an upstream signal isolating pass filter 58, the output of pass filter 58 is supplied to ADSL transceiver 64 (Fig. 3), considered an upstream signal amplifier, for amplifying the isolated upstream signal (col. 5, lines 53-56), a downstream signal from central office 10 is isolated by passing through a downstream signal isolating pass filter 56, and the output of pass filter 56 is supplied to ADSL transceiver 62 (Fig. 3), considered a downstream amplifier, for amplifying the isolated downstream signal (col. 5, lines 49-53).

22. Regarding claim 27, the DSL repeater unit 50 includes ADSL repeater 60.

23. Regarding claims 29 and 30, high pass filters 56 and 58 are respectively coupled to the input and output of the downstream amplifier.

24. Regarding claims 32 and 33, high pass filters 56 and 58, considered band pass filters, are respectively coupled to the input and output of the upstream amplifier.

25. Regarding claim 35, Erreygers teaches a low pass filter 54 coupled to a digital subscriber loop repeater 60 and a high pass filter 56 coupled to the DSL repeater 60.

26. Regarding claim 37, the DSL loop is part of a DSL network.

27. Regarding claim 38, the DSL repeater includes a power connection via power supply 66.

28. Regarding claim 39, the digital subscriber loop repeater includes a control information connection via controller 68.

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

30. Claims 5 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erreygers in view of Conroy et al. U.S. Patent 6,459,684.

31. Regarding claims 5 and 34, Erreygers teaches a digital subscriber loop repeater for increasing a gain of a DSL signal (col. 5, lines 43-59, Figs. 2 and 3), but does not expressly disclose that the DSL signal is processed with an echo cancellation filter.

32. Conroy et al. teach an echo cancellation filter 614 for processing a received DSL signal.

33. It would have been obvious to one of ordinary skill in the art to use an echo cancellation filter as taught by Conroy et al. in the system of Erreygers for correcting errors in the received signal, as stated by Conroy et al. in column 3, lines 53-59.

34. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzannes et al. U.S. Patent 5,751,716 in view of Erreygers.

35. Regarding claims 6 and 7, Tzannes et al. disclose an ADSL system in which the frequencies used to transmit the upstream and downstream signals are separated (col. 1, lines 60-65), wherein on the receiving end of the transmission link, the signals are low-pass filtered to reduce the effects of high-frequency noise transients (col. 4, lines 1-5).

36. Tzannes et al. do not disclose a repeater for increasing the gain of the digital subscriber loop signal.

37. Erreygers discloses a DSL repeater unit 50 that increases the gain of a digital subscriber loop signal (col. 5, lines 43-59, Figs. 2 and 3).

38. It would have been obvious to one of ordinary skill in the art to use a repeater as taught by Erreygers in the system of Tzannes et al. in order to efficiently implement ADSL over long distances (see abstract).

39. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Erreygers in view of Adler U.S. Patent 4,939,747.

40. Regarding claim 9, Erreygers teaches a digital subscriber loop repeater for increasing a gain of a DSL signal (col. 5, lines 43-59, Figs. 2 and 3), but does not expressly disclose that the repeater is remotely fine-tuned using control signals sent to the repeater.

41. Adler teaches an addressable repeater where the gain of a repeater is remotely fine-tuned via control signals sent from a central location (see col. 6, lines 23-28).

42. It would have been obvious to one of ordinary skill in the art use the teaching of remotely fine tuning a repeater, as disclosed by Adler, in the system of Erreygers, so the repeater be optimized for various transmission characteristics.

43. Claims 10, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erreygers in view of Pesetski et al. U.S. Patent 6,151,691.

44. Regarding claim 10, Erreygers teaches a digital subscriber loop repeater for increasing a gain of a DSL signal (col. 5, lines 43-59, Figs. 2 and 3), but does not expressly disclose that the repeater is remotely reconfigured using control signals sent to the repeater.

45. Pesetski et al. disclose a repeater receiving control signals and configuring itself accordingly (see col. 5, lines 49-61).

46. It would have been obvious to one of ordinary skill in the art to employ the teaching of remotely controlling a repeater, as disclosed by Pesetski et al., in the repeater of Erreygers, in order for a technician to test the repeater to see if it is functioning properly.

47. Regarding claim 11, Erreygers teaches a digital subscriber loop repeater for increasing a gain of a DSL signal (col. 5, lines 43-59, Figs. 2 and 3), but does not expressly disclose that the repeater is queried in order to control the repeater or determine its status.

48. Pesetski et al. disclose a repeater that receives a coded query signal in order to control operation of the repeater or determine its status (see col. 6, line 30 to col. 7, line 18).

49. It would have been obvious to one of ordinary skill in the art to employ the teaching of querying the repeater, as disclosed by Pesetski et al., in the system of Erreygers such that more efficient testing and repair of the lines may be effected (see Pesetski et al., col. 3, lines 1-4).

50. Regarding claim 13, Pesetski et al. further teach that the repeater may enter into a loop-back mode (col. 6, lines 46-48).

Allowable Subject Matter

51. Claim 12 is allowed.

52. The following is a statement of reasons for the indication of allowable subject matter:

Erreygers teaches a DSL repeater for increasing the gain of a digital subscriber loop signal, but fails to teach querying the digital subscriber loop repeater for a purpose of controlling the operation of the digital subscriber loop repeater, wherein controlling the operation of the digital subscriber loop repeater includes provisioning the digital subscriber loop repeater with an operational mode selected from the group consisting of normal, no-ADSL-repeater with coils in circuit, and no-ADSL-repeater with coils out of circuit.

Conclusion

53. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dl
5/3/04

YOUNG T. TSE
PRIMARY EXAMINER